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The Recent Past on Eglin Air Force Base

In 1944 the Germans were bombing England with "V" missiles. As part of the Allied response, Eglin constructed a replica of a German V-1 missile site. Code-named "Operation Crossbow," the bombing tests began immediately following construction.

On Eglin AFB, Santa Rosa Island, Florida, two parallel rows of concrete pillars emerge from the stark white dunes and extend 150 meters toward the Gulf of Mexico. Not far away, in a remote heavily wooded section of the reservation, north of the Choctawhatchee Bay, nine immense concrete structures stand like ruins of a forgotten city.

These sites are not remnants of an ancient civilization but rather physical reminders of important missions conducted within the United States during World War II. They were conceived and fabricated in secret, tested with a sound and fury equivalent to any battlefield, but abandoned soon after the war. These sites reflect an important moment in both the nation's and the Air Force's history. However, commemorating or preserving them for the future is not without problems.

Cultural resources managers are often in the difficult situation of proposing the preservation of sites associated with events which are transitional between recorded history and remembered events. Such sites often have not had the benefit of time to demonstrate their significance. The sites mentioned above and others at Eglin are representative of a widespread class of properties within DoD that are associated with World War II.

For young Americans, World War II is historic in the same way as the Civil War and Revolutionary War: it is an event of which they have no personal recollections. Preservation of the material record of this era offers these citizens a connection to the recent past. World War II sites such as those recorded at Eglin AFB provide insight into the events that shaped the daily lives of a vanishing generation and serve as material reminders of the truly global nature of the Second World War—a conflict which left indelible marks on our nation's landscape. As described below, many of these cultural landmarks bear testimony to American ingenuity and determination as well as the military role in development of advanced technologies.

Operation Crossbow

In 1944, when the outcome of World War II was far from settled, enigmatic weapon complexes were identified on the Axis-held coast of France. Each consisted of a series of concrete structures, up to 300' in length. Although the function of the oddly shaped structures was not immediately known, intelligence concluded the obvious, that the sites were part of a new, although yet unidentified, weapon to be used against Great Britain. Further investigations suggested that the Germans were building these structures to store, assemble, and fire V-1 and V-2 missiles, unmanned rockets utilized for long-range attacks. In order to avoid potential interference with the invasion of the continent, termed Project Overlord, and to circumvent additional attacks on England, the Joint Chiefs sought to destroy the sites. However, in the interest of saving men and material, a practice run was proposed to determine the most efficient means of attack.

On January 25, 1944, Brig. Gen. Grandison Gardner, commanding general of the Army Air Force Proving Ground Command at Eglin, received a telephone call from General H. H. "Hap" Arnold, Army Air Corps Chief of Staff. "Gran, I can't tell you over the telephone what I am talking about, but I hope you will know," Gardner later recalled Arnold as saying. "I want you to build one, study it and decide what is the best way to destroy it. I want it done in days and not weeks. Did you hear? Days and not weeks, and it will take a hell of a lot of concrete" (Kessler 1982 Part Two:31-32).

Winston Churchill designated the project Operation Crossbow—a term later used for all operations against the German long-range rocket program. Specifications for construction were based on information smuggled out of France, photographs taken by reconnaissance aircraft, and sketches done by British intelligence. A courier brought the specifications in a sealed pouch to Eglin where, amid as much secrecy as the command could maintain in disguising a project so large, work commenced.

With time of the essence and building materials scarce, Proving Ground Command purchasing agents scoured the Southeastern states looking for concrete, steel, and bricks. Under tight security,

planes, trains, and trucks rushed materials to Eglin, where thousands of military and civilian workers labored around the clock to complete the work. As General Arnold had requested, the work was done in days rather than weeks, and 12 days after work began the project was complete.

Test approaches to the target began as soon as the concrete dried. Teams of officials scrupulously checked the effectiveness of various approaches, the efficiency of tactical operations, and the vulnerability of aircraft to ground defenses.

The Eglin tests confirmed beyond question what American field commanders in Europe, the Operation Crossbow Committee designated by the Joint Chiefs, and General Arnold suspected: minimum altitude attacks by fighter planes, properly delivered, provided the most effective and economical aerial countermeasure against the sites. The medium and high altitude bombing attacks which the British had employed and advocated were ineffective and wasteful of lives and planes.

The results of Eglin's tests caused acrimonious debate within the Allied command. The British refused to accept the results and continued to favor high altitude bombers. Despite rising bitterness among American air chiefs in Washington, Eisenhower acceded to the demands of the War Cabinet, which continued to insist on the British approach. As a result, the air support for Project Overlord continued to suffer from the diversion of bombing resources to Operation Crossbow. Ultimately, it was not air attacks, but the occupation of the launch sites by Allied ground forces that overcame the threat. As for the techniques and weapons developed at Eglin, they were employed with conclusive results throughout the remainder of the war against bridges, railways, and other targets that shared characteristics with the V-missile sites.

Constructed of concrete, masonry block, and brick, nine structures of various sizes and shapes comprise Eglin's Operation Crossbow district. Some were heavily damaged as a result of the intense bombing to which they were subjected in February 1944, and the buildings are currently in various states of preservation. Distributed over a 14-acre area, the structures include replicas of a missile launching ramp, missile-storage building, an "aiming house" where the V-1 was equipped with guidance mechanisms and targeted prior to launch, V-1 assembling facilities, and support buildings. These structures, now overgrown, remain as they were left in 1944, some intact and others wearing the marks of well-aimed bombs. Together they offer mute testimony to Eglin's role in this strategic World War II endeavor.

The JB-2 rocket was the American copy of the German V-1. This c. 1945 photo was taken during JB-2 testing at Eglin.

JB-2 Testing

In June 1944, Germany began bombarding England, especially London, with the V-1 or Buzz bomb. In July 1944, parts of a V-1 salvaged by the Polish underground and recovered from crashed but unexploded bombs, were flown to Wright-Patterson Field and within three weeks America had completed its first copy of a V-1, the JB-2 (Jet Bomb), the United States' first operational guided missile and the predecessor of the modern cruise missile.

A problem quickly arose, however: the US had no experience launching their new bombs. To solve this dilemma, Eglin was chosen to test launching techniques. Three sites were created on Eglin's Gulf-side property, all designed to test different launching techniques.

One launching site, now located on Sierra Club property east of Destin, Florida, featured a concrete inclined launch ramp. Steam-powered and portable ramps were also tested at this site. The other two sites are located within a half mile of each other on Santa Rosa Island, on Air Force property.

Recorded as Florida archeological sites 8OK246 and 8OK248, the remnants of these two JB-2 test sites, along with bunkers and debris fields from unsuccessful test flights, were identified as part of Eglin's initial historic property inventory. After identification, these were evaluated for historic significance and subsequently listed on the National Register of Historic Places.

8OK246 contains the remains of a 400' concrete launch ramp as well as an intact observation bunker and a JB-2 wreck south of the ramp. Although the ramp itself is missing, its concrete pillars stand against the passage of time.

8OK248 is the remains of a JB-2 mobile launch site, containing two concrete pads and an observation bunker, all virtually unscathed. Abandoned to the elements, 18 individual JB-2 wrecks lie scattered across the dunes, a reflection

Remains of launch ramp at 8OK246 today. This site and neighboring 8OK248 are listed on the National Register.

of the difficulties encountered in achieving field readiness.

All of the Eglin launchings were directed south to the Gulf of Mexico. The targets were buoys placed at measured distances, up to 150 miles, to which the headings and range of the guidance system were adjusted. There is no evidence that live warheads were used, as many of the wrecks examined by Eglin archeologists have concrete ballast filling the warhead compartment.

An initial order of 1,000 of these JB-2s was made in July 1944. The primary contractors were Republic Aviation for the airframe, Ford Motor Company for the pulse-jet engine, and Jack and Heinz for the guidance system. In January 1945, 75,000 JB-2s were ordered, and a launching squadron was formed to launch the missiles in Europe and the Pacific. The war concluded prior to their deployment and the orders were canceled. Ultimately 1300 were produced, but only seven survive today.

Army weapons analysts watched JB-2 launches from inside observation bunkers. The photo below shows the bunker at 8OK246 as it appears today.

The JB-2 testing at Eglin continued until March of 1946, when the project was canceled. After cancellation, the reusable portions of the sites were disassembled. However, the debris from crashes was left where it fell, and one or more surplus JB-2s are reported to have been buried in the surrounding dunes.

Summary

Until recently, the physical record of Operation Crossbow, JB-2 testing, and other significant events on Eglin have been largely ignored. World War II events, however, have reached the age defined by the National Register as worthy of consideration and, perhaps, preservation. With the end of the Cold War, sites associated with this era are also being considered for significance. Increasing age combined with a growing recognition of the importance of preserving evidence of transitional events have fostered a movement, in a manner similar to that which saved Civil War battlefields in the 1890s, to contemplate what we will do with the physical heritage of our recent past.

Sites such as Eglin's Operation Crossbow complex and JB-2 launch sites not only remind us of our past, of World War II, and of the beginnings of the Army Air Corps, but also of the evolution of technology that has resulted in modern aeronautical and defense programs. Further, these areas are standing monuments to the resourcefulness of the American people and military during the greatest war in human history. The documentation of such significant events and protection of associated historic properties are among the many challenges facing cultural resources managers at Eglin and throughout the DoD.

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Photos courtesy Eglin AFB.